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INTRATHORACIC FAT VOLUME IS AN INDEPENDENT PREDICTOR OF CORONARY ARTERY DISEASE IN HEALTHY, ASYMPTOMATIC SUBJECTS

Poster Contributions
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Background: Intrathoracic adipose tissue (IAT) appears to be associated with cardiac events in patients, but it is not clear if it is predictive of CAD in asymptomatic subjects.

Methods: 348 asymptomatic patients undergoing screening non-contrast CT to determine coronary calcium score (CCS) were studied. IAT volumes were quantified using QFAT software with user-defined range of CT slices covering the heart. We tested 2 nested models. We first created an APRIORI logistic regression model to predict CCS>100 Agatston Units based on traditional risk factors: age, male, smoking, LDL, hypertension, DM, and metabolic syndrome. The next model then added TAT >250 cm3. We computed odds ratios for IAT, and compared c-statistics, and computed the integrated discrimination improvement (IDI) for the nested models.

Results: Of the 348 subjects, 61 (17.5%) had CCS>100 with an average score of 109.5. When IAT >250 was added to the traditional model, it was independently associated with greater risk of CCS>100 (Odds Ratio 2.07, 95% CI (1.01, 4.23) p=0.046) (Figure 1). Compared to the traditional model, the addition of IAT non-significantly increased the c-statistic (0.771 vs 0.778, p=0.54), However there was a significant value of IDI (Absolute IDI=0.017, Relative IDI=14%, p=0.045). IAT was independently associated with metabolic syndrome (OR: 8.92 95% CI (3.2, 24.9) p<.0001)

Conclusions: IAT is an independent predictor of CCS > 100 in asymptomatic subjects and correlates more significantly than traditional risk factors.